

Notice of Allowability

Application No.

10/691,351

Examiner

Barbara J. Musser

Applicant(s)

RABINOWITZ, MARIO

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the interview summary dated 6/11/06.
2. ☒ The allowed claim(s) is/are 11-15,27,30,33 and 36-38.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 2/4/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 6/11/06.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 11-15, 23, 27-29, 33, and 36-39, drawn to a method of making mirrored balls, classified in class 156, subclass 268.
 - II. Claims 24-26, 30-32, 34, and 35, drawn to an apparatus for forming mirrored spheres, classified in class 156, subclass 510.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the process could be performed with a different apparatus such as one that cuts out the balls with a laser.
3. Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.
4. This application contains claims directed to the following patentably distinct species: A: balls(spheres), B: cylinders, and C: ellipses. The species are independent or distinct because they are different shapes.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, no claim is generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

5. During a telephone conversation with Mario Rabinowitz on 6/8/06 a provisional election was made without traverse to prosecute the invention of group I and species A, claims 11-15, 27, 33, and 36-39. Affirmation of this election must be made by applicant in replying to this Office action. Claims 23-26, 28, 29-32, 34, and 35 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

The restriction between method and apparatus has been withdrawn subsequent to amendment of the claims due to their allowability.

Examiner's Amendment

6. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mario Rabinowitz on 6/11/06.

The application has been amended as follows:

In the claims:

1 – 10. (canceled).

11. (currently amended) A method for fabricating mirrored mid-plane spheroidal balls using a plurality of nuggets bonded to a plate, the method comprising the steps of:

a) bonding a first dielectric plate to one side of a metallic plate and a second dielectric plate to the opposite side sides of a the metallic plate to form an assembly wherein the metallic plate functions as a mirror material;

b) cross cutting said first and second dielectric plates to form an array of evenly spaced nuggets on said metallic plate;

c) heat treating said nuggets to form hemispheres on both sides of said metallic plate;

d) removing the combination of adjoining hemispheres with sandwiched metallic plate between them to form rotationally free mirrored midplane spheroidal balls.

12. (currently amended) The method of claim 11 wherein the heat treating comprises

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immersing the nuggets in a hot liquid ~~is the heat treatment~~.

13. (original) The method of claim 11 wherein said first dielectric plate and said second dielectric plate are transparent.

14. (original) The method of claim 11 wherein said first dielectric plate is transparent and second dielectric plate is opaque.

15. (currently amended) The method of claim 11 wherein said metallic plate ~~functions both as mirror material and for maintaining~~ maintains tension on the assembly.

Claims 16 - 26 (canceled).

27. (currently amended) A method for fabricating micro-mirrored balls for directed reflection of light, comprising the steps of

a) advancing ~~a sheet~~ an assembly comprised of at least one sheet of reflective material covered by ~~at least one sheet~~ of transparent material on either side, said reflective material functioning as a mirror;

b) said ~~sheet~~ assembly kept under tension;

c) cross-cutting said assembly into nuggets;

d) heating said nuggets to form micro-mirror balls made of hemispheres on either side of the reflective material; ~~and~~

e) punching out said micro-mirror balls from said sheet; and

d) f) placing said micro-mirror balls in a heat bath.

28-29. (cancelled)

30. (currently amended) Apparatus for producing micro-mirror balls comprising:

a) a supply of a laminates comprised of at least one plate of reflective material covered

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by two dielectric plates, one on either side;

b) ~~said laminate moving between tension and pressure producing devices;~~ a device for applying tension to said laminate;

c) a tool which cross cuts said dielectric plates into nuggets;

d) ~~said sheet being heated~~ a heater for heating said nuggets to form micro-mirror balls made of hemi-spheres on either side of the reflective material; and

e) ~~an extrusion die~~ a punch which punches out said micro-mirror balls.

31-32. (cancelled)

33. (currently amended) An apparatus for making micro-mirror balls comprising:

a) a supply of flexible laminate plate of thin reflective metallic material sandwiched between two thin dielectric transparent materials;

b) ~~means for supplying a continuous source of said laminate plate;~~

c) ~~tension producing means in said plate;~~

d) ~~means for providing a confronting path for cross-cutting, heating-applying, and extracting spheroidal nuggets from said laminate plate;~~

e) ~~means for cross-cutting and punching out said balls from said laminate plate; and~~

f) ~~means for collecting said micro-mirror balls.~~

b) a device for applying tension to said laminate;

c) a tool which cross cuts said transparent materials into nuggets;

d) a heater for heating said nuggets to form micro-mirror balls made of metallic material sandwiched between hemi-spheres; and

e) a punch which punches out said micro-mirror balls.

34-35. (cancelled).

36. (currently amended) A method of manufacturing micro-mirror balls, comprising the steps of

a) ~~producing~~ providing a laminate plate consisting of a thin reflective material sandwiched between two thin dielectric materials wherein the reflective material functions as a mirror material;

b) providing tension to prevent ~~move a continuous supply of~~ said laminate plate from buckling;

c) cross-cutting said ~~balls~~ dielectric materials on said ~~laminate plate~~ reflective material to form nuggets;

d) heating said nuggets to form hemispheres on either side of the reflective material;

~~d) e)~~ e) punching out said hemispheres to form micro-mirror balls from said laminate plate.

37. (previously presented) The method of claim 36 wherein said balls are heat treated.

38. (currently amended) The method of claim 36 wherein said balls are heat ~~annealed~~ treated in a liquid bath.

39. (cancelled)

Reasons for Allowance

7. The following is an examiner's statement of reasons for allowance: the prior art of record does not teach or fairly suggest forming mirrored midplane balls by applying a dielectric or transparent material in either side of a material which acts as a mirror, cutting the dielectric or transparent material into nuggets, heating the nuggets to form

hemi-spheres, and punching the hemispheres out so that the mirror type material is located between two hemispheres of transparent or dielectric material forming spheres. While it is known to apply a transparent material to a surface, shape it into nuggets, and heat it to form hemi-spheres,(Robello et al, Figure 5), these hemi-spheres are not then cut from their support so that the support remains attached between the hemi-spheres and hemi-spheres on the opposite side of the support which cooperate to form spheres.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara J. Musser whose telephone number is (571) 272-1222. The examiner can normally be reached on Monday-Thursday; alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571)-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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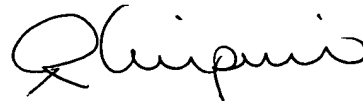
published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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